

## Proposal Full View

### Applicant Information

Organization Name  \*

Tax ID **800727433**

Proposal Name Upgrades, Calibration, and Application of Groundwater Model for Groundwater and Salt Management in Livermore Valley Groundwater Basin \*

Proposal Objective To upgrade and improve Zone7's groundwater model for use in evaluating groundwater and salt management strategies and alternatives, and for the development of plans that involve groundwater supplies, aquifer storage and constituent transport. \*

### Budget

Other Contribution	<input type="text" value="\$0.00"/>
Local Contribution	<input type="text" value="\$0.00"/>
Federal Contribution	<input type="text" value="\$0.00"/>
Inkind Contribution	<input type="text" value="\$0.00"/>
Amount Requested	<input type="text" value="\$250,000.00"/> *
Total Project Cost	<input type="text" value="\$250,000.00"/> *

### Geographic Information

Latitude \* DD(+/-)  MM  SS

Longitude \* DD(+/-)  MM  SS

Longitude/Latitude Clarification	WGS 1984	Location	Livermore Valley, California, USA
County		Contra Costa, Alameda *	
Ground Water Basin		Livermore Valley	
Hydrologic Region		San Francisco Bay	
Watershed	South Bay (Unique Watershed No. 18, RBU2204)		

### Legislative Information

Assembly District	15th Assembly District, 18th Assembly District, 20th Assembly District *
Senate District	9th Senate District, 10th Senate District *
US Congressional District	District 10 (CA), District 11 (CA) *

### Project Information

Project Name

Implementing Organization	Zone 7 Water Agency
Secondary Implementing Organization	N/A

Proposed Start Date	4/1/2013
Proposed End Date	6/20/2014
Project Scope	Subdivide model layers; add Streams & Lakes packages; extend period thru 2012; recalibrate; & run 3 optimization scenarios.
Project Description	<p>The proposed project will upgrade and improve Zone 7's groundwater model of the Livermore Valley Groundwater Basin for use in evaluating groundwater and salt management strategies and alternatives, as well as for the development of specific project plans that involve groundwater supplies, aquifer storage and constituent transport. Zone 7's current Livermore Valley Basin Model contains three active layers that represent two aquifers. Although the model has not been calibrated using historical TDS concentrations, it was used previously to simulate the transport of TDS with the assumption that TDS represents salts and acts conservatively (i.e., non-reactive) during its transport. This approach is generally good for qualitative comparisons, but not as good for predicting probable TDS concentrations. Zone 7 now desires the ability to predict the approximate salinity consequences of various projects, actions, and basin management strategies for groundwater sustainability. Also, the current model does not explicitly simulate stream routing or lake water budgets. Therefore to address these discrepancies in the groundwater model, the proposed project will be to refine and/or subdivide existing model layers; add the Streams and Lakes packages; extend the model time period through 2012 (currently from 1974 to 2004); and recalibrate the model. The upgraded and calibrated model will be applied to simulate scenarios pumping and recharge activities in the basin while improving salt concentrations.</p> <p>Three groundwater and management scenarios will be developed and run by the model. Optimization of one of the scenarios using the model will be set up and run. These scenarios will assist Zone 7 staff with implementation of its Salt and Nutrient Management Plan, and provide Zone 7 staff with a "roadmap" and enough experience with optimization runs that they will be able perform future runs without the need for outside consulting services.</p>
Project Objective	<p>The objective of the proposed project is to upgrade and improve Zone 7's groundwater model of the Livermore Valley Groundwater Basin for use in evaluating groundwater and salt management strategies and alternatives, as well as for the development of specific project plans that involve groundwater supplies, aquifer storage and constituent transport.</p>

### Project Benefits Information

Project Benefit Type	Benefit Type	Measurement	Description
Primary	Modeling-Groundwater modeling developed or improved	0	Update existing groundwater model
			Use model to

Secondary	Other-Groundwater Studies	0	identify best gw and salt management to maintain salt concentrations below basin objectives (500 mg/L).
-----------	---------------------------	---	---

Project Objective

**Budget**

Other Contribution	0
Local Contribution	0
Federal Contribution	0
Inkind Contribution	0
Amount Requested	250000
Total Project Cost	250000

**Geographic Information**

Latitude DD(+/-)	37	MM 41	SS 4
Longitude DD(+/-)	-121	MM 50	SS 49
Longitude/Latitude Clarification	WGS 1984	Location	United States
County Contra Costa, Alameda Ground Water Basin Livermore Valley Hydrologic Region San Francisco Bay WaterShed South Bay (Unique Watershed No. 18, RBU2204)			

**Legislative Information**

Assembly District	15th Assembly District, 18th Assembly District, 20th Assembly District
Senate District	9th Senate District, 10th Senate District
US Congressional District	District 10 (CA), District 11 (CA)

**Section : Applicant Information and Question's Tab****APPLICANT INFORMATION AND QUESTION'S TAB****Q1. Applicant Information****Provide the agency name, address, city, state, and zip code of the applicant submitting the application.**

Alameda County Flood Control and Conservation District, Zone 7 a.k.a., Zone 7 Water Agency 100 North Canyons Parkway  
Livermore, CA 94551

**Q2. Proposal Description:**

**Provide a brief abstract of the Proposal. This abstract must provide an overview of the proposal including the main issues and priorities addressed in the proposal. Within the abstract, please describe how the proposal relates to the GWMP's BMO's.**

The proposed project will upgrade and improve Zone 7's groundwater model of the Livermore Valley Groundwater Basin for use in evaluating groundwater and salt management strategies and alternatives, as well as for the development of specific project plans that involve groundwater supplies, aquifer storage and constituent transport. Zone 7 is currently updating its Salt and Nutrient Management Plan to meet requirements of the State Water Resources Control Board's Recycled Water Policy,

and to include updated local land and water development plans. The use of a reliable groundwater model would be helpful in predicting the effects of these future plans, and to further develop Zone 7's ongoing and future salt management strategies. Zone 7's current Livermore Valley Basin Model contains three active layers that represent two aquifers, an upper unconfined aquifer and a lower confined aquifer that includes the many productive intervals used by local municipal wells, and an intervening aquitard. Although the model has not been calibrated using historical TDS concentrations, it was used previously to simulate the transport of TDS with the assumption that TDS represents salts and acts conservatively (i.e., non-reactive) during its transport. This approach is generally good for qualitative comparisons, but not as good for predicting probable TDS concentrations. Zone 7 now desires the ability to predict the approximate salinity consequences of various projects, actions, and basin management strategies for groundwater sustainability. Also, the current model does not explicitly simulate stream routing or lake water budgets. Therefore to address these discrepancies, the proposed project includes refining and/or subdividing existing model layers; adding the Stream Flow Routing and Lakes packages; extending the model time period through 2012 (currently from 1974 to 2004); and recalibrating the model using existing and added 2004-2012 groundwater level data, salt concentrations, and streamflow. The upgraded and calibrated model will be applied to simulate scenarios pumping and recharge activities in the basin while improving salt concentrations. Three groundwater and management scenarios will be developed and run by the model. Optimization of one of the scenarios using the model will be set up and run. These scenarios will assist Zone 7 staff with implementation of its Salt and Nutrient Management Plan, and provide Zone 7 staff with a roadmap and enough experience with optimization runs that they will be able perform future runs without the need for outside consulting services. The project goals and objectives are to (1) calibrate the model to effectively simulate current conditions, (2) use the model for ongoing groundwater and salt management and project planning efforts, and (3) use the model for optimizing groundwater storage, production, and recharge. The upgraded and calibrated groundwater flow and transport model directly supports the goals and objectives of the GWMP by providing a tool to simulate groundwater levels, groundwater quality, and potential management actions that are needed to implement the plan. Use of the upgraded and recalibrated model will support the following Basin Management Objectives (BMO) in the GWMP: (1) Monitoring and maintenance of groundwater levels through conjunctive use and management of regional water supplies; (2) Prevent overdraft conditions by maintaining total pumping at or below sustainable/safe yields; (3) Groundwater quality monitoring and management, as well as tracking and addressing any degradation; (4) Monitor and prevent inelastic land surface subsidence from occurring as a result of groundwater withdrawals; and (5) Optimize use of storage while protecting and enhancing groundwater goals.

### Q3. Project Director:

**Provide the name and details (including email) of the person responsible for executing the grant agreement for the applicant. Persons that are subcontractors to be paid by the grant cannot be listed as the Project Director.**

Jill Duerig General Manager Zone 7 Water Agency 100 North Canyons Parkway Livermore, CA 94588  
jduerig@zone7water.com 925-454-5016

### Q4. Project Manager:

**Provide the name and contact information (including email) of the Project Manager from the applicant agency or organization that will be the day-to-day contact on this application.**

Tom Rooze Associate Hydrogeologist Zone 7 Water Agency 100 North Canyons Parkway Livermore, CA 94588  
trooze@zone7water.com 925-454-5069

### Q5. Additional Information:

**Based on the region's location, what is the applicable DWR region office (Northern, North Central, South Central, or Southern)? The following link can be used to view each DWR region office boundaries:**

[http://www.water.ca.gov/groundwater/groundwater\\_basics/gw\\_contacts\\_info.cfm](http://www.water.ca.gov/groundwater/groundwater_basics/gw_contacts_info.cfm)

- 1) ☐ Northern Region
- 2) ☒ North Central Region
- 3) ☐ South Central Region
- 4) ☐ Southern Region

### Q6. Additional Information:

**Provide the Date of GWMP Adoption, if any, and list the pursuant Water Code Section or other legal Authority in which it was adopted.**

Zone 7's GWMP was adopted on September 12, 2005 by Zone 7's Board of Directors, pursuant to California Groundwater

Management Planning Act, Water Code Section 10750, et seq.

### Q7. Additional Information:

**Provide a list of documents that support and indicate collaboration with other local public agencies with regard to the management of the affected groundwater basin (e.g., MOUs, MOAs, JPAs, adoption of a GWMP, recognition of county ordinances in permitting processes, or party to a groundwater basin adjudication order).**

Zone 7 collaborates with its four retail agencies (DSRSD, Livermore, Pleasanton and CWS, collectively known as the Tri Valley Retail Group [TVRG]) to prevent over-drafting of the basin. As a condition of existing water supply contracts (listed below), each retailer is limited to an annual Groundwater Pumping Quota (GPQ), which is generally based on average historical uses and is part of the basin sustainable yield. The retailers are permitted to pump a combined 7,245 AF annually with no charge from Zone 7. However, they must pay a recharge fee for all groundwater pumped exceeding their quota, for which Zone 7 must provide additional artificial recharge to balance the excess pumping: -Contract between Zone 7 and DSRSD for Municipal & Industrial Water Supply (signed Aug 23, 1994). -Contract between Zone 7 and CWS Company for Municipal & Industrial Water Supply (signed Aug 16, 1994). -Contract between Zone 7 and City of Livermore for Municipal & Industrial Water Supply (signed Jan 17, 1996). -Contract between Zone 7 and City of Livermore for Municipal & Industrial Water Supply (adopted Aug 16, 2000). Zone 7 worked closely with the TVRG during the preparation of Zone 7's GWMP (2005). The TVRG reviewed a draft version of the report, provided comments that were incorporated into the final report, and acknowledges Zone 7's adoption of the GWMP as "a starting point for future local discussions and decisions on groundwater management" (letter to Zone 7, Sep 14, 2005, copy provided in Attachment 3 of this application). Zone 7 also worked closely with the TVRG during the preparation of Zone 7's Salt Management Plan (SMP, May, 2004). Zone developed the SMP with input from a Technical Advisory Group, which was composed of local retail agencies and a citizens committee (Zone 7 SMP Submittal and DSRSD/Livermore Water Recycling Permitting Coordination, letter from Zone 7, DSRSD, and Livermore to RWQCB, June 3, 2004). Zone 7 submitted the SMP to RWQCB, and reviewed and approved in 2004 (letter from RWQCB to Zone 7, Sep 24, 2004). Three local cities (Dublin, Livermore and Pleasanton) have well ordinances, all of which are administered by Zone 7 by agreement. As a result of these well ordinances, any planned new well construction, soil-boring construction, or well destruction must be permitted by Zone 7 before the work is started: -A Resolution Authorizing the County of Alameda to Represent the City of Livermore in the Regulation of Wells within the City Limits, City of Livermore Resolution 76-73, authorized June 4, 1973, signed June 13, 1973. -An Ordinance Adding Article 3 to Chapter 9 (Water), Title II (Zoning and Development) of the Ordinance Code of the City of Pleasanton, Relating to Well Standards, City of Pleasanton Ordinance 720, published Feb 7, 1974. -An Ordinance of the City of Dublin Adopting Alameda County Code, Title 3, Chapter 6, Article 14, By Reference, City of Dublin Ordinance 3-88, adopted Feb 8, 1988.

### Q8. Additional Information

**Name the entity(ies) providing the fund(s) reported in the above Budget section under the category "Other Contribution". If there are no "Other Contributions" Please answer this question with, "No Other Contributions".**

No Other Contributions

### Q9. Eligibility:

**List the urban water suppliers that will receive funding from the proposed grant. Please provide the agency name, a contact phone number and email address. Those listed must submit self certification of compliance with CWC §525 et seq. and AB1420, see Attachment 10. If there are none, so indicate.**

Jill Duerig General Manager Zone 7 Water Agency 100 North Canyons Parkway Livermore, CA 94588  
jduerig@zone7water.com 925-454-5016

### Q10. Eligibility:

**Have all of the urban water suppliers, listed in Q9 above, submitted complete 2010 UWMP to DWR? If not, explain why. Have those plans been verified as complete by DWR? If not, explain current status.**

Zone 7 submitted its 2010 UWMP to the DWR on 12/23/10 (received by DWR on 12/24/10). The plans have been verified as complete by DWR on 9/19/2011 (received by Zone 7 on 9/22/10).

### Q11. Completeness Check:

**Have all of the fields in the application been completed?**

Yes

**Q.11. Completeness Check (cont)**

If no, please explain. If yes, answer this question with "NA".

NA

**Section : Application Attachments Tab****APPLICATION ATTACHMENTS TAB****Attachment 1. Authorizing Documentation**

Upload authorizing documentation here. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".

Last Uploaded Attachments: Att1\_LGA12\_Z7WA\_AuthDoc\_1of1.pdf

**Attachment 2. Eligible Applicant Documentation**

Upload eligible documentation here. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".

Last Uploaded Attachments: Att2\_LGA12\_Z7WA\_EligDoc\_1of1.pdf

**Attachment 3. Status of GWMP**

Upload the GWMP documentation here. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".

Last Uploaded Attachments: Att3\_LGA12\_Z7WA\_GWMP\_1of1.pdf

**Attachment 4. Project Description**

Upload project description here. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".

Last Uploaded Attachments: Att4\_LGA12\_Z7WA\_ProjD\_1of1.pdf

**Attachment 5. Work Plan**

Upload work plan here. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".

Last Uploaded Attachments: Att5\_LGA12\_Z7WA\_WrkPln\_1of1.pdf

**Attachment 6. Budget**

Upload budget here. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".

Last Uploaded Attachments: Att6\_LGA12\_Z7WD\_BUDGET\_1of1.pdf

**Attachment 7. Schedule**

Upload schedule here. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".

Last Uploaded Attachments: Att7\_LGA12\_Z7WD\_SCHED\_1of2.pdf

**Attachment 8. Quality Assurance**

**Upload quality assurance documentation here. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".**

Last Uploaded Attachments: Att8\_LGA12\_Z7WA\_QA\_1of1.pdf

#### **Attachment 9. Past Performance**

**Upload past performance documentation here. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".**

Last Uploaded Attachments: Att9\_LGA12\_Z7WA\_PERFORM\_1of1.pdf

#### **Attachment 10. AB1420 and Water Meter Implementation Compliance**

**Upload 1420 and water meter implementation documentation here, if applicable. Ensure file name is consistent with the LGA Grant PSP, Section II. "How to Submit An Application".**

Last Uploaded Attachments: Att10\_LGA12\_Z7WA\_1420\_1of1.pdf

---